



Part of the arcade, just before the Ponte degli Arci, where the Aqua Anio Novus crossed the Fosso di San Gregorio, east of [Rome](#) (Italy). Although in 'modern times' some maintenance took place, a major part of the structure came down.



View into one of the many **manholes** in the Gier, one of the four aqueducts of [Lyon](#) (France). The red plaster is *opus signinum* to get the manhole and the channel watertight. Note that the manhole was a little wider than the channel; it was probably also a little deeper for settling purposes.



Because of lack of maintenance many aqueducts suffered from leakages. This caused not only loss of water but also did harm the structure. Quite close the **Pont du Gard** a view on a major accumulation of calcarious material called '[sinter](#)'.

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Maintenance

Roman aqueducts required a comprehensive system of maintenance and repair of accidental **leaks** and breaches, to clear lines of debris and to remove the built up of calcareous deposits called **sinter**, that naturally occur in the water. Agrippa rearranged the maintenance of the aqueducts of Rome and caesar Claudius added extra personnel to that, see [Administration](#), based on [Frontinus](#) 116.

After construction maintenance paths or **roads** were built along the trace. These also served to delimit the areas where farming and other activities were not permitted, sometimes bordered by marking stones, the so-called 'cippi' (singular [cippus](#)) earmarking an area of 15 meters on both sides of the aqueduct trace. Also local announcements are known like the inscription - the Pierre de Chagnon - near the [Gier aqueduct of Lyon](#), stating that

By authority of caesar Traianus Hadrianus Augustus nobody has the right to work, sow or plant in this area which is earmarked for the protection of the aqueduct.

Many aqueducts were equipped at more or less constant distances with **manholes** (putei, singular **puteus**) facilitating access to the subterranean channels. Vitruvius (8,4,3) wrote about 35,5 meters (= 1 actus = 120 Roman feet), Plinius (NH 31,31) advised 71 meters (= 2 actus). The distance between the manholes in the Gier aqueduct of Lyon is estimated between 72 and 77 meters. Although, some manholes were also present on top of arcaded channelled like the access shafts on top of the Plat d'Air arcade in Chapognost ([Gier aqueduct of Lyon](#)). Additional manholes were built where intensive maintenance or frequent repairs were necessary.

Frontinus gives a detailed description of the maintenance crews under responsibility of the curator aquarum of Rome, their duties and the "dishonest practice of the watermen", see Frontinus 144 onwards.

Maintenance was not always successful. Both [Juvenal and Martial](#) refer to the Porta Capena in Rome as a wet gateway or dripping arch, although it is unclear which aqueduct was involved.

With the fall of the Roman empire many aqueducts fell into disuse from lack of maintenance, although some were still active in the Middle Ages and even beyond, see [Later history](#).